In the Claims:

Please amend the claims as follows.

Claims 1-25 (cancelled)

26. (new) A diffractive focusing device for focusing light from a subject onto a focal plane located a distance **D** from said device, comprising:

a light transmissive substrate;

a plurality of selectively light opaque elements supported by said light transmissive substrate and being selectively controlled to be either substantially light opaque or substantially light transmissive;

said plurality of selectively light opaque elements being controlled to form a focusing diffraction grating pattern of light transmissive channels separated by light opaque regions, said focusing diffraction grating pattern having a variable spacing between successive light transmissive channels, which spacing varies as a function of **D**, such that light from said subject passing through said focusing device is focused onto said focal plane.

27. (new) The device of claim 26, wherein said plurality of selectively light opaque elements are comprised of liquid crystal material.

28. (new) The device of claim 26, wherein said focusing diffraction grating pattern is a concentric plurality of light transmissive rings.

29. (new) The device of claim 28, wherein a spacing Δ between successive light transmissive channels is determined by the following equation:

$$\Delta = [(h + \lambda)^2 - \mathbf{D}^2]^{1/2}$$

where $h = [r^2 + \mathbf{D}^2]^{1/2}$;

r is the radial distance from the center of said focusing diffraction pattern to the outermost light transmissive channel;
D is the focal distance to said focal plane; and
λ is a wavelength of light incident on said focusing device.

30. (new) The device of claim 26, wherein said plurality of selectively light opaque elements are formed in said substrate so as to be substantially flush with an exterior surface of said substrate.

31. (new) The device of claim 26, wherein said plurality of selectively light opaque elements are formed on said substrate.

32. (new) The device of claim 26, further comprising in combination a corrective diffractive device positioned substantially coaxially with said diffractive focusing device, said corrective diffractive device comprising a light transmissive substrate, a plurality of selectively light opaque elements supported by said light transmissive substrate and being selectively controlled to be either substantially light opaque or substantially light transmissive;

said plurality of selectively light opaque elements of said corrective diffractive device being controlled to form a correcting diffraction grating pattern of light transmissive channels separated by light opaque regions, said correcting diffraction grating pattern having a spacing between successive light transmissive channels that is different from the spacing of said focusing diffraction grating pattern.

33. (new) A diffractive focusing apparatus for focusing light from a subject onto a focal plane located a distance **D** from said device, said apparatus comprising a focusing device including:

a light transmissive substrate;

a plurality of selectively light opaque elements supported by said light transmissive substrate and being selectively controlled to be either substantially light opaque or substantially light transmissive;

said plurality of selectively light opaque elements being controlled to form a focusing diffraction grating pattern of light transmissive channels separated by light opaque regions, said focusing diffraction grating pattern having a variable spacing between successive light transmissive channels, which spacing varies as a function of **D**, such that light from said subject passing through said focusing device is focused onto said focal plane; and

a corrective device positioned substantially coaxially with said focusing device, said corrective device including

a light transmissive substrate, a plurality of selectively light opaque elements supported by said light transmissive substrate and being selectively controlled to be either substantially light opaque or substantially light transmissive;

said plurality of selectively light opaque elements of said corrective device being controlled to form a correcting diffraction grating pattern of light transmissive channels separated by light opaque regions, said correcting diffraction grating pattern having a spacing between successive light transmissive channels that is different from the spacing of said focusing diffraction grating pattern.

34. (new) The apparatus of claim 33, wherein said plurality of selectively light opaque elements of said focusing device are comprised of liquid crystal material.

35. (new) The apparatus of claim 33, wherein said focusing diffraction grating pattern is a concentric plurality of light transmissive rings.

36. (new) The apparatus of claim 35, wherein a spacing Δ between successive light transmissive channels of said focusing device is determined by the following equation:

$$\Delta = [(h + \lambda)^2 - \mathbf{D}^2]^{1/2}$$

where $h = [r^2 + \mathbf{D}^2]^{1/2}$;

r is the radial distance from the center of said focusing diffraction pattern to the outermost light transmissive channel;

D is the focal distance to said focal plane; and
λ is a wavelength of light incident on said focusing device.

37. (new) The apparatus of claim 33, wherein said plurality of selectively light opaque elements of said focusing device are formed in said substrate so as to be substantially flush with an exterior surface of said substrate.

38. (new) The apparatus of claim 33, wherein said plurality of selectively light opaque elements of said focusing device are formed on said substrate.

39. An image capturing apparatus, comprising:

an image sensor;

a diffractive focusing device for focusing light from a subject onto said image sensor located a distance **D** from said device, including

a light transmissive substrate;

a plurality of selectively light opaque elements supported by said light transmissive substrate and being selectively controlled to be either substantially light opaque or substantially light transmissive;

said plurality of selectively light opaque elements being controlled to form a focusing diffraction grating pattern of light transmissive channels separated by light opaque regions, said focusing diffraction grating pattern having a variable spacing between successive light transmissive channels, which spacing varies as a function of **D**, such that light from said subject passing through said focusing device is focused onto said image sensor.

40. The image capturing apparatus of claim 39, further comprising a shutter between said diffractive focusing device and said image sensor.

41. The image capturing apparatus of claim 39, wherein said image sensor comprises an array of solid state light sensitive elements.

42. The image capturing apparatus of claim 41, wherein said image sensor comprises a CCD array.

43. The image capturing apparatus of claim 39, wherein said image sensor comprises photographic film.

44. (new) The image capturing apparatus of claim 39, wherein said plurality of selectively light opaque elements are comprised of liquid crystal material.

45. (new) The image capturing apparatus of claim 39, wherein said focusing diffraction grating pattern is a concentric plurality of light transmissive rings.

46. (new) The image capturing apparatus of claim 45, wherein a spacing Δ between successive light transmissive channels is determined by the following equation:

$$\Delta = [(h + \lambda)^2 - D^2]^{1/2}$$

where $h = [r^2 + D^2]^{1/2}$;
r is the radial distance from the center of said focusing diffraction pattern to the outermost light transmissive channel;
D is the focal distance to said focal plane; and
λ is a wavelength of light incident on said focusing device.

47. (new) The image capturing apparatus of claim 39, wherein said plurality of selectively light opaque elements are formed in said substrate so as to be substantially flush with an exterior surface of said substrate.

48. (new) The image capturing apparatus of claim 39, wherein said plurality of selectively light opaque elements are formed on said substrate.

49. (new) The image capturing apparatus of claim 39, further comprising in combination a corrective diffractive device positioned substantially coaxially with said diffractive focusing device, said corrective diffractive device comprising a light transmissive substrate, a plurality of selectively light opaque elements supported by said light transmissive substrate and being selectively controlled to be either substantially light opaque or substantially light transmissive;

said plurality of selectively light opaque elements of said corrective diffractive device being controlled to form a correcting diffraction grating pattern of light transmissive channels separated by light opaque regions, said correcting diffraction grating pattern having a spacing between successive light transmissive channels that is different from the spacing of said focusing diffraction grating pattern.